

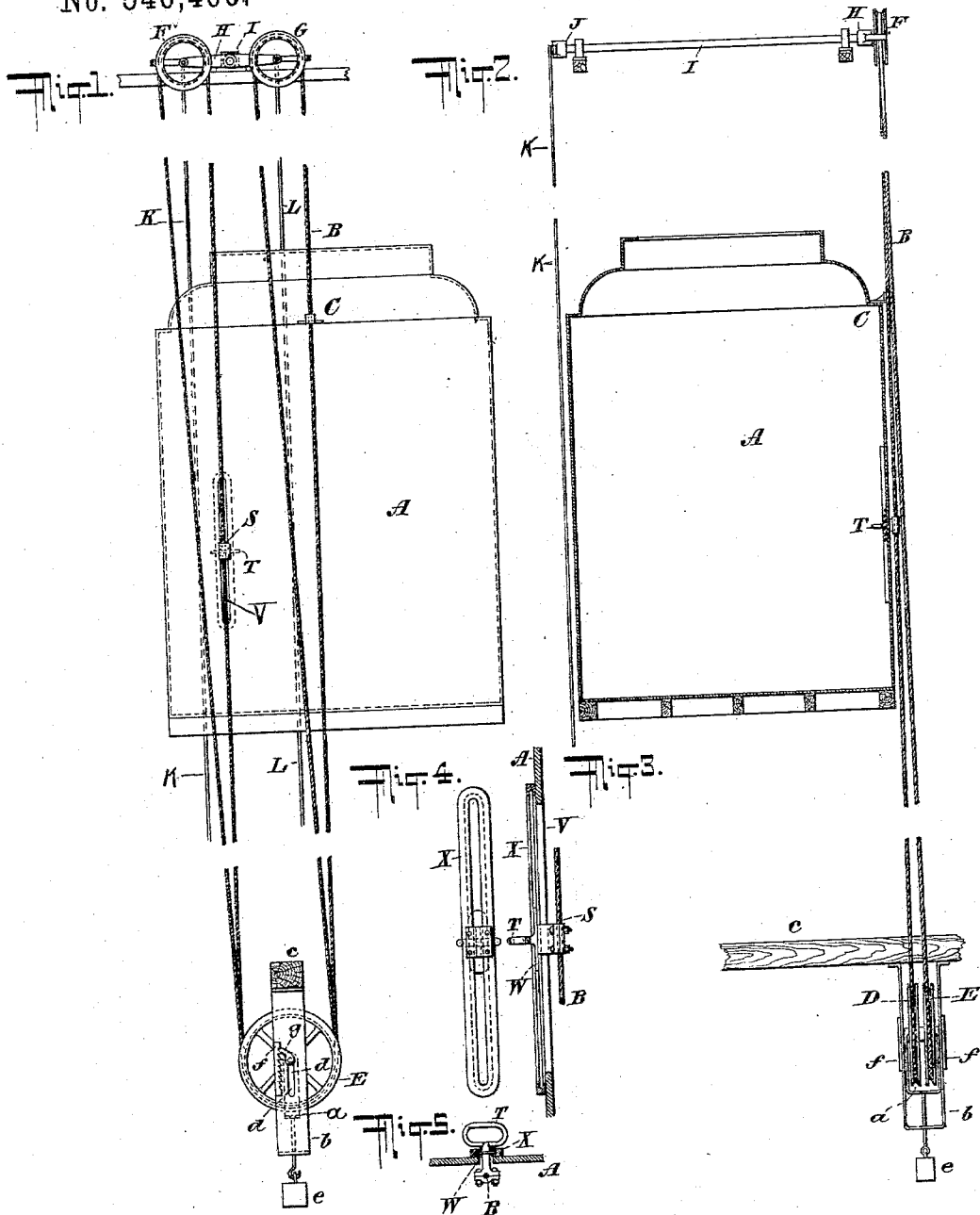
(No Model.)

2 Sheets—Sheet 1.

J. McADAMS.  
CONTROLLING DEVICE FOR ELEVATORS.

No. 546,406.

Patented Sept. 17, 1895.



WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

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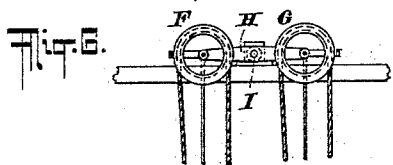


Fig. 7.

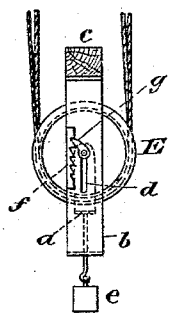
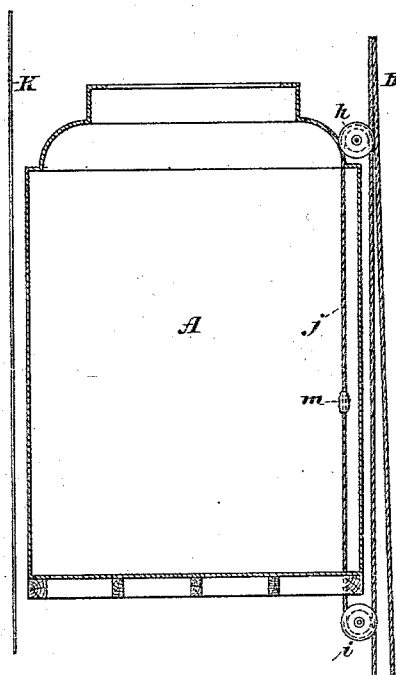
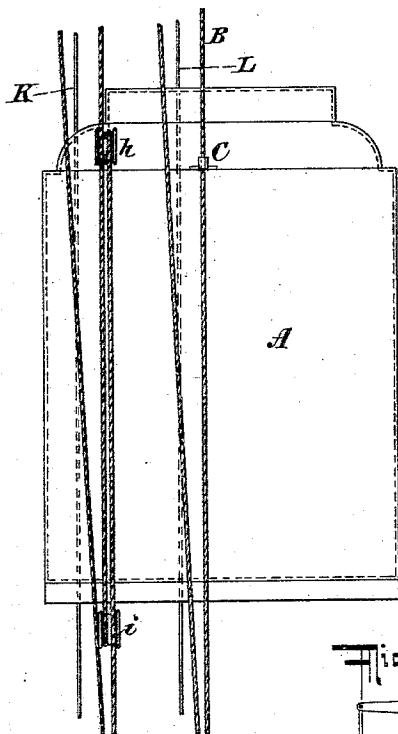
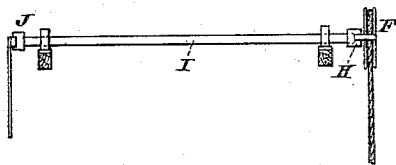
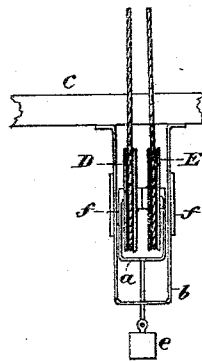
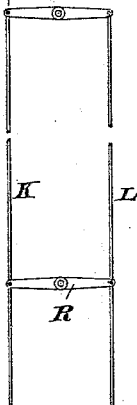


Fig. 8.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN MCADAMS, OF NEW YORK, N. Y.

## CONTROLLING DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 546,406, dated September 17, 1895.

Application filed June 26, 1895. Serial No. 554,069. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN MCADAMS, a subject of Her Majesty the Queen of Great Britain, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Controlling Devices for Elevators, of which the following is a specification.

The invention relates to improvements in controlling devices for elevators; and it consists in the novel means hereinafter described and claimed whereby the attendant in the carriage may conveniently and with entire reliability operate the stopping and starting devices—as, for example, the pilot-valve which admits water to the main valve of the hydraulic engine.

Referring to the accompanying drawings, Figure 1 is a side elevation, partly broken away and in section, of an elevator-carriage having connecting mechanism constructed and arranged in accordance with the invention made the subject of this application. Fig. 2 is a like view of same, but looking at another face of the elevator-carriage, the latter being shown in vertical section. Fig. 3 is an enlarged vertical section through a portion of the carriage and illustrating the handle connected with the traveling cable and the guide for said handle, the latter not being connected with the carriage, but traveling therewith and exposed within reach of the attendant in the carriage. Fig. 4 is an enlarged detached view of the outer face of said guide. Fig. 5 is an enlarged transverse section through a portion of the elevator-carriage and the aforesaid guide and showing in elevation the handle clamped to and traveling with the cable. Fig. 6 is a side elevation, partly broken away, of an elevator-carriage provided with the controlling mechanism in a modified form. Fig. 7 is a like view of same, but looking at another face of the carriage, the latter being shown in section; and Fig. 8 is a detached elevation of the means connected with the rocking shaft for operating the stopping and starting devices.

In the drawings, A designates the usual carriage, and B a continuous cable which is secured to the carriage at one point C and is arranged to travel upon the pulley-wheels D E, located at one end of the elevator-shaft, and

the pulley-wheels F G, located at the other end of said shaft. The pulley-wheels F G are mounted upon the opposite ends of the bar 55 or lever H, which is secured to one end of the rock-shaft I, upon the opposite end of which is secured the cross-bar J, at whose ends, as more clearly illustrated in Figs. 1 and 8, are secured the rods K L, which extend downward to the lower portion of the elevator-shaft and are connected at their lower ends by the pivotally-mounted lever or cross-bar M, preferably carrying the segments N O, to which the connections P Q, which pass to the 65 stopping and starting devices, are secured. The rocking of the shaft I imparts a rocking motion to the cross-bar J and a vertical motion to the downwardly-extending rods K L, the latter motion serving to rock the cross-bar or lever M and operate the connections P Q in a well-known manner. If desired, at some intermediate point or points the downwardly-extending rods K L may be connected by a pivotally-mounted cross-bar R, 75 as illustrated in Fig. 8. It will be observed that the motion imparted from the rock-shaft I to the rods K L and from said rods to the stopping and starting devices will be absolutely positive in every instance. The single 80 continuous cable B passes downward from the point C around the pulley-wheel D, and thence upward to and over the pulley F at the top of the shaft, and thence downward and around the pulley E and upward to and over the pulley G, whence the cable continues to the point of beginning C, thus forming one continuous cable fastened to the car at a single point C. Upon the cable B, at the point S, may be clamped in any suitable manner a 90 projection or handle T, of any convenient form to be grasped, and which will preferably project through a slot V, formed in the car, so as to be within convenient reach of the attendant. In the drawings I have illustrated the 95 handle T as being provided with a plate or flange W, located within the opposite sides of the vertical guide X, secured to the carriage A in proper relation to the vertical slot V, as illustrated more clearly in Fig. 3. The handle T is not fastened in the guide X, but is adapted to have a free vertical movement therein under the direction of the attendant in the carriage. It will be apparent that 100

when it is desired to start or stop the carriage A it will be simply necessary for the attendant to grasp the handle T and pull upward or downward upon the same, since thereby the cable B will be drawn either to extend or contract the bights of same and rock the cross-bar or lever H, whereby the shaft I, vertical rods K L, and stopping and starting devices will be set in motion. Since the cable B travels with the car, the handle T will remain stationary while the carriage is in motion, and but slight effort on the part of the attendant will be required to move the cable sufficiently to actuate the stopping and starting devices, the latter being thus under the absolute control of the attendant in the carriage. The arrangement of the cable B and handle T is such that, while the stopping and starting devices are within the positive control of the attendant, there will be no danger of the carriage being started from accidental causes, and hence safety in the use of the appliances is assured.

The pulley-wheels D E are mounted upon a shaft which is carried at the upper ends of the bent frame *a*, which is held between the opposite sides of the main frame *b*, secured to the beam *c*, and provided in its opposite sides with the slots *d*, through which the ends of the axle of the wheels D E project. To the frame *a* is secured the suspended weight *e*, which exerts a constant downward pull on the wheels D E and cable B, thus preserving the latter taut and automatically taking up any slack which might come therein by reason of use or atmospheric changes. Upon the outer faces of the main supporting-frame *b* are secured the ratchet-plates *f*, and upon the ends of the axle of the wheels D E are secured the pawls *g*, whose ends are in constant contact with the ratchet-plates *f* and serve to prevent any rising movement in the said wheels D E. It will not be necessary in every instance to make use of the weight *e*, since the pulleys D E are suspended in the loop of the cable and will of their own weight prevent slackness in the latter. The purpose of the weight *e* is merely to supplement the weight of the pulleys D E in drawing downward on the cable B, and the purpose of the pawls *g* is to lock the wheels D E and their frame *a* against the upward movement.

It will thus be seen that there are three special features connected with the present invention, the first being the continuous cable B, secured to the carriage at a single point; second, the downwardly-extending rods K L, forming a positive transmitting mechanism from the rock-shaft to the stopping and starting devices, and, third, the construction and arrangement of the pulley-wheels D E, whereby the cable B is kept constantly taut by a force applied at the lower end of the elevator-shaft and reliability of operation is secured.

The modified form of the invention illustrated in Figs. 6 and 7 dispenses with the han-

dle T, projecting through a slot in the carriage, so as to be within reach of the attendant, and provides for a portion of the cable being carried directly through the car. In Figs. 6 and 7 it will be observed that upon the carriage A are provided the upper and lower pulley-wheels *h i* around which the cable B passes, whereby a section *j* of the cable is located directly within the carriage in convenient position to be reached by the attendant. Upon the section of the cable that is within the carriage may, if desired, be secured a knob *m* to facilitate the grasping of the cable by the attendant. The cable illustrated in Figs. 6 and 7 is secured to the carriage at a single point C, whence it extends downward around the pulley-wheel D, thence upward to and around the pulley-wheel *h* on the carriage, thence downward and around the pulley-wheel *i* and upward to and around the pulley-wheel F, whence the cable passes downward to and around the pulley-wheel E, and thence upward to and around the pulley-wheel G to the place of beginning C. The construction and arrangement of the parts shown in Figs. 6 and 7 are identical in every respect with those illustrated in Figs. 1 and 2, with the exception that in Figs. 6 and 7 the cable passes over the pulleys *h i*, carried by the carriage, and hence it will be unnecessary to refer specifically to the other features of construction shown in Figs. 6 and 7. The particular construction shown in Figs. 6 and 7, involving the pulley-wheels *h i* on the carriage, I propose to make the subject of a separate application for patent.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In controlling mechanism for elevators, the carriage, the pulleys at the top of the elevator shaft and the pulleys at the lower end of said shaft, combined with the cable passing over said pulleys in the manner described and having one of its sections positively secured to the carriage, the starting and stopping devices, and mechanism connected with said pulleys for operating said starting and stopping devices from the carriage by force applied to one part of the other section of the said cable; substantially as set forth.

2. In controlling mechanism for elevators, the carriage, the continuous cable B secured to the carriage, the pulley wheels at the upper portion of the elevator shaft over which pulleys the said cable passes, the bar connecting said pulleys, the rock shaft upon which the said bar is mounted, the rods suspended from said rock shaft, and starting and stopping devices connected with said rods, combined with the pulley wheels at the lower end of said shaft around which said cable passes; substantially as set forth.

3. In controlling mechanism for elevators, the carriage, the continuous cable B connected with said carriage, the pulleys at the upper end of the elevator shaft and the pulleys at the lower end of the elevator shaft, around

which pulleys the said cable passes, combined with the stopping and starting devices operable from said cable, the pulleys at the lower end of the shaft being suspended upon the cable to exert a tension thereupon; substantially as set forth.

4. In controlling mechanism for elevators, the carriage, the continuous cable B connected to said carriage, the pulleys at the upper end of the elevator shaft, the pulleys at the lower end of the elevator shaft, around which said pulleys the said cable passes, and a projection carried by said cable and entering the carriage, combined with the starting and stopping devices and means intermediate said pulleys and said devices to operate the latter from said cable; substantially as set forth.

5. In controlling mechanism for elevators, the carriage, the continuous cable B connected to the said carriage, the pulleys at the upper end of the elevator shaft, the pulleys at the lower end of the elevator shaft, over which pulleys the said cable passes as set forth, combined with the weighted frame connected with the pulleys at the lower end of the shaft, pawl

and ratchet mechanism for locking said frame and pulleys against upward movement, starting and stopping devices and means intermediate said devices and said pulleys to operate said devices from the said cable; substantially as set forth.

6. In controlling mechanism for elevators, the carriage, the continuous cable connected to the carriage, the pairs of pulleys at the upper and lower ends of the elevator shaft over which pulleys the said cable passes as set forth, the handle upon said cable passing into the carriage, and means for guiding said handle, combined with starting and stopping devices and means intermediate the pulleys and said devices to operate the latter from the said cable; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 14th day of June, A. D. 1895.

JOHN MCADAMS.

Witnesses:

CHAS. C. GILL,

EDWARD D. MILLER.